

Application No.: 10/723510

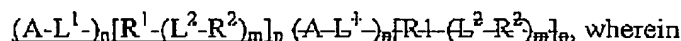
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Amendments to the Claims:

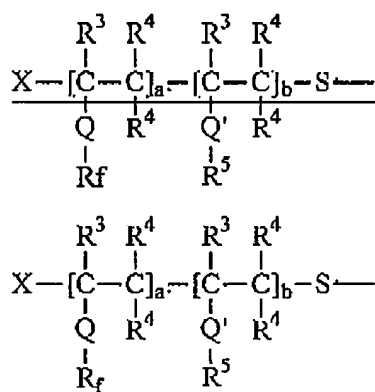
The following Listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently amended) A composition comprising
a) a fluorochemical oligomeric compound of the formula:



A is a fluorochemical oligomeric moiety of the formula



wherein the sum of $a + b$ is a $[[an]]$ number such that the compound is oligomeric, and a is at least 1;

R^3 is hydrogen, halogen, or straight chain or branched chain alkyl containing 1 to about 4 carbon atoms;

each R^4 is independently hydrogen or straight chain or branched chain alkyl containing 1 to about 4 carbon atoms;

Q and Q' are each independently a covalent bond or an organic linking group,

R_f is a fluoroaliphatic group that comprises a fully fluorinated terminal group;

R^5 is a fluorine-free aliphatic group;

X is a hydrogen atom or a group derived from a free radical initiator;

L^1 and L^2 are independently divalent linking groups,

R^1 is the residue of an organic isocyanate,

R^2 is a hydrogen or an aliphatic group,

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n is 1 to 4, m is 0 to 4, and p is 1 to 4,

wherein at least one of said R² and R⁵ groups has 12 or more carbon atoms; and

b) an antisoiling compound.

2. (Original) The composition of claim 1 wherein the ratio of a to b of said fluorochemical oligomer a), is at least 2:1.

3. (Original) The composition of claim 1, wherein R_f has the structure C_oF_{2o+1}, where o is 3 to 7.

4. (Original) The composition of claim 1, wherein each of L¹ and L² are derived from the reaction of a nucleophilic group with an isocyanate group.

5. (Original) The composition of claim 4 wherein L¹ and L² are independently selected from a ureylene, a urethanylbiuretylene, a guanidinylene and a carbodiimidylene.

6. (Original) The composition of claim 1 wherein a+b of said oligomeric moiety is 3 to 20.

7. (Original) The composition of claim 1 wherein the ratio of component a) to component b) is 1:20 to 20:1.

8. (Original) The composition of claim 1, wherein Q and Q' of said fluorochemical oligomer are independently selected from the following structures, wherein each k is independently an integer from 0 to about 20, R₁' is hydrogen, aryl, or alkyl of 1 to about 4 carbon atoms, and R₂' is alkyl of 1 to about 20 carbon atoms:

-SO ₂ NR ₁ '(CH ₂) _k O(O)C-	-CONR ₁ '(CH ₂) _k O(O)C-
-(CH ₂) _k O(O)C-	-CH ₂ CH(OR ₂ ')CH ₂ O(O)C-
-(CH ₂) _k C(O)O-	-(CH ₂) _k SC(O)-

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$-(\text{CH}_2)_k\text{O}(\text{CH}_2)_k\text{O}(\text{O})\text{C}-$	$-(\text{CH}_2)_k\text{S}(\text{CH}_2)_k\text{O}(\text{O})\text{C}-$
$-(\text{CH}_2)_k\text{SO}_2(\text{CH}_2)_k\text{O}(\text{O})\text{C}-$	$-(\text{CH}_2)_k\text{S}(\text{CH}_2)_k\text{OC}(\text{O})-$
$-(\text{CH}_2)_k\text{SO}_2\text{NR}_1'(\text{CH}_2)_k\text{O}(\text{O})\text{C}-$	$-(\text{CH}_2)_k\text{SO}_2-$
$-\text{SO}_2\text{NR}_1'(\text{CH}_2)_k\text{O}-$	$-\text{SO}_2\text{NR}_1'(\text{CH}_2)_k-$
$-(\text{CH}_2)_k\text{O}(\text{CH}_2)_k\text{C}(\text{O})\text{O}-$	$-(\text{CH}_2)_k\text{SO}_2\text{NR}_1'(\text{CH}_2)_k\text{C}(\text{O})\text{O}-$
$-(\text{CH}_2)_k\text{SO}_2(\text{CH}_2)_k\text{C}(\text{O})\text{O}-$	$-\text{CONR}_1'(\text{CH}_2)_k\text{C}(\text{O})\text{O}-$
$-(\text{CH}_2)_k\text{S}(\text{CH}_2)_k\text{C}(\text{O})\text{O}-$	$-\text{CH}_2\text{CH}(\text{OR}_2')\text{CH}_2\text{C}(\text{O})\text{O}-$
$-\text{SO}_2\text{NR}_1'(\text{CH}_2)_k\text{C}(\text{O})\text{O}-$	$-(\text{CH}_2)_k\text{O}-$
$-\text{C}_k\text{H}_{2k}-\text{OC}(\text{O})\text{NH}-$	$-\text{C}_k\text{H}_{2k}-\text{NR}_1'\text{C}(\text{O})\text{NH}-$
$-\text{OC}(\text{O})\text{NR}'(\text{CH}_2)_k-$	$-(\text{CH}_2)_k\text{NR}_1'-$ and
$-(\text{CH}_2)_k\text{NR}_1'\text{C}(\text{O})\text{O}-$	

9. (Original) The composition of claim 1 wherein said R^2 group is an aliphatic group of 12 to 75 carbon atoms.

10. (Original) The composition of claim 1 wherein the sum of carbons atoms in said R^2 and R^5 groups is 12 to 100.

11. (Original) The composition of claim 1 wherein said antisoiling compound is selected from a methacrylic ester polymer, colloidal alumina, colloidal silica, a silsesquioxane, polyvinylpyrrolidone and a water-soluble condensation polymer comprising the reaction product of formaldehyde and an amine.

12. (Original) The composition of claim 1 wherein said antisoiling compound comprises a water-insoluble addition polymers derived from a polymerizable ethylenically unsaturated monomer free of non-vinyl fluorine, the polymer having at least one major transition temperature higher than about 25°C .

13. (Original) The composition of claim 1, where b of said fluorochemical oligomeric moiety is 0.

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14. (Original) The composition of claim 1, wherein R^1 is the residue of an aliphatic or aromatic polyisocyanate.

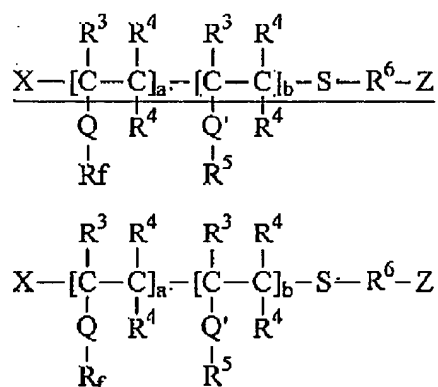
15. (Original) The composition of claim 1 wherein the ratio of component a) to component b) is 1:10 to 10:1.

16. (Original) The composition of claim 1, wherein said antisoiling (component b)) is selected from the group of (meth)acrylic ester (co)polymers, colloidal alumina, colloidal silica, silsesquioxanes, poly(vinylpyrrolidone) and styrene-maleic anhydride copolymers.

17. (Original) The composition of claim 16 wherein said antisoiling agent comprises ethyl methacrylate/methyl methacrylate copolymer.

18. (Currently amended) The composition of claim 1, wherein said fluorochemical oligomeric component is the reaction product of

a) a fluorochemical oligomer of the formula



wherein

R^6 is an aliphatic or aromatic group and Z is an isocyanate-reactive group,

b) a isocyanate of the formula $R^1(NCO)_x$, wherein x is 1 to 6, wherein R^1 is an aliphatic, alicyclic or aromatic group, and

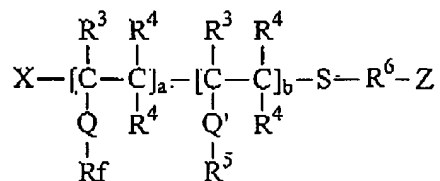
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c) an aliphatic compound of the formula $R^2-(Z)_q$, where R^2 is a aliphatic group, Z is an isocyanate reactive group and q is 1 to 4.

19. (Original) The composition of claim 1, wherein said fluorochemical oligomeric component is the reaction product of

a) a fluorochemical oligomer of the formula



wherein

R^6 is an aliphatic or aromatic group,

R^5 is a non-fluorinated aliphatic group of 12 to 75 carbons atoms, and

Z is an isocyanate-reactive group, and

b) an isocyanate of the formula $R^1(NCO)_x$ wherein x is 1 to 6, wherein R^1 is an aliphatic, alicyclic or aromatic group.

20. (Original) A coating composition comprising a mixture of:

- a) a solvent; and
- b) the composition of Claim 1.

21. (Original) The coating composition of claim 20 wherein said mixture comprises an aqueous solution, dispersion or suspension.

22. (Original) The coating composition of claim 20 further comprising a surfactant.

23. (Original) The coating composition of claim 20 comprising 0.1 to 50 weight percent of said composition of claim 1.

24. (Original) An article comprising:

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a substrate having one or more surfaces; and
the fluorochemical composition of Claim 1 coated on one or more surfaces of said
substrate.

25. (Original) The article of Claim 24 wherein the substrate is a fibrous substrates.

26. (Original) A method of imparting repellency and antisoiling to a substrate, having
one or more surfaces, comprising the steps of:

applying the coating composition of claim 20 onto one or more surfaces of said substrate;
and

curing the coating composition at ambient or elevated temperature.